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Keloids: Does patients' sex influence the presentation and recurrence post-excision?

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KEYWORDS

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Keloid is a dermo-fibroproliferative disorder thought to result from abnormal proliferation of fibroblasts. Few studies have been done to compare the clinical presentation and outcomes of keloids based on gender.

The objective of this study was to determine whether biological sex influences the presentation and recurrence of keloid. This was a 10-year retrospective study of patients managed for keloids between January 2008 and December 2018 at the Kenyatta National Hospital Nairobi, Kenya. The study was approved by the local ethics and research committee. The protocol for managing keloids in the centre involved intralesional excision with post-excision superficial radiotherapy of 15 greys within 24 hrs of surgery. A total of 2530 patients were operated on with keloids and treated with post-excision superficial radiotherapy during the study period. Over the course of the study, three patients died of

unrelated causes leaving 2527 patients with 2713 keloids. The male to female ratio was 1 to 2. Over 70% of the female patients were below the age of 30, compared to 55% of the male patients. The modal age group for the male patients was 25-30 years while for female was 20-25 years for the female patients (p -value<0.05). There were statistical significance differences in the percentage of keloid presentation between the two groups in the age brackets of 15-20, 20-25, and 25-30 with female patients showing higher percentages in all (Figure 1). The most common anatomical site exhibiting keloidal scarring was the earlobes for female patients (69.7 %), while the cheek was the most common site among men (30.1 %) (p -value<0.05) (Figure 2). The rate of recurrence differed between the groups, with 5% of male participants and 2.8% of female participants, experiencing renewed keloid scarring (p -value<0.05). Male patients had significantly higher recurrence rates at the following anatomical sites: ears, cheek, and abdomen, and females had only in the chest region (Figure 2).

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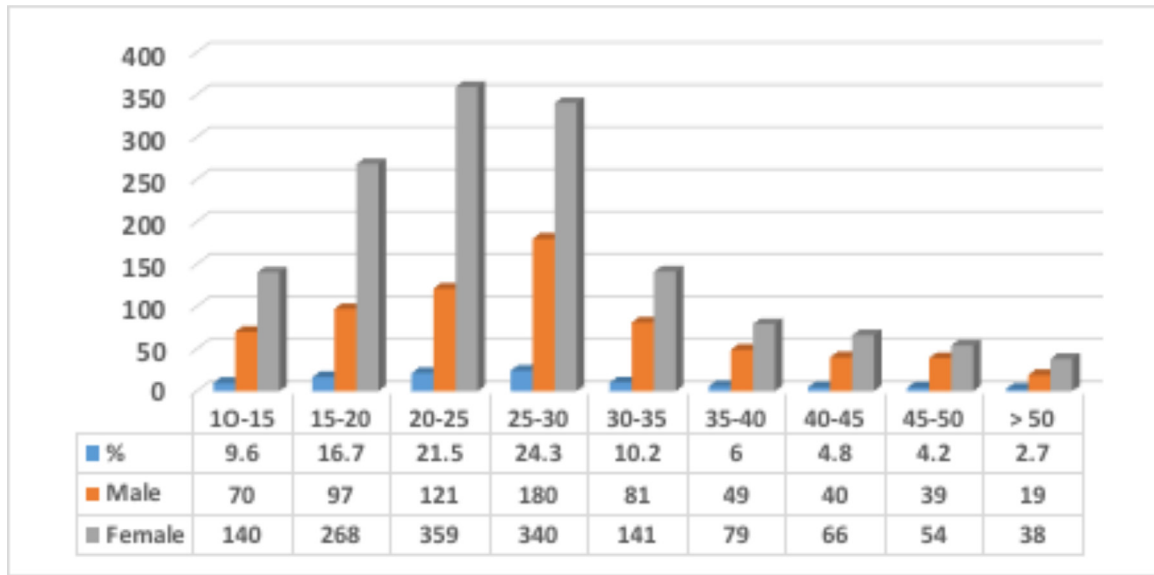


Figure 1 Age of keloid presentation according to gender

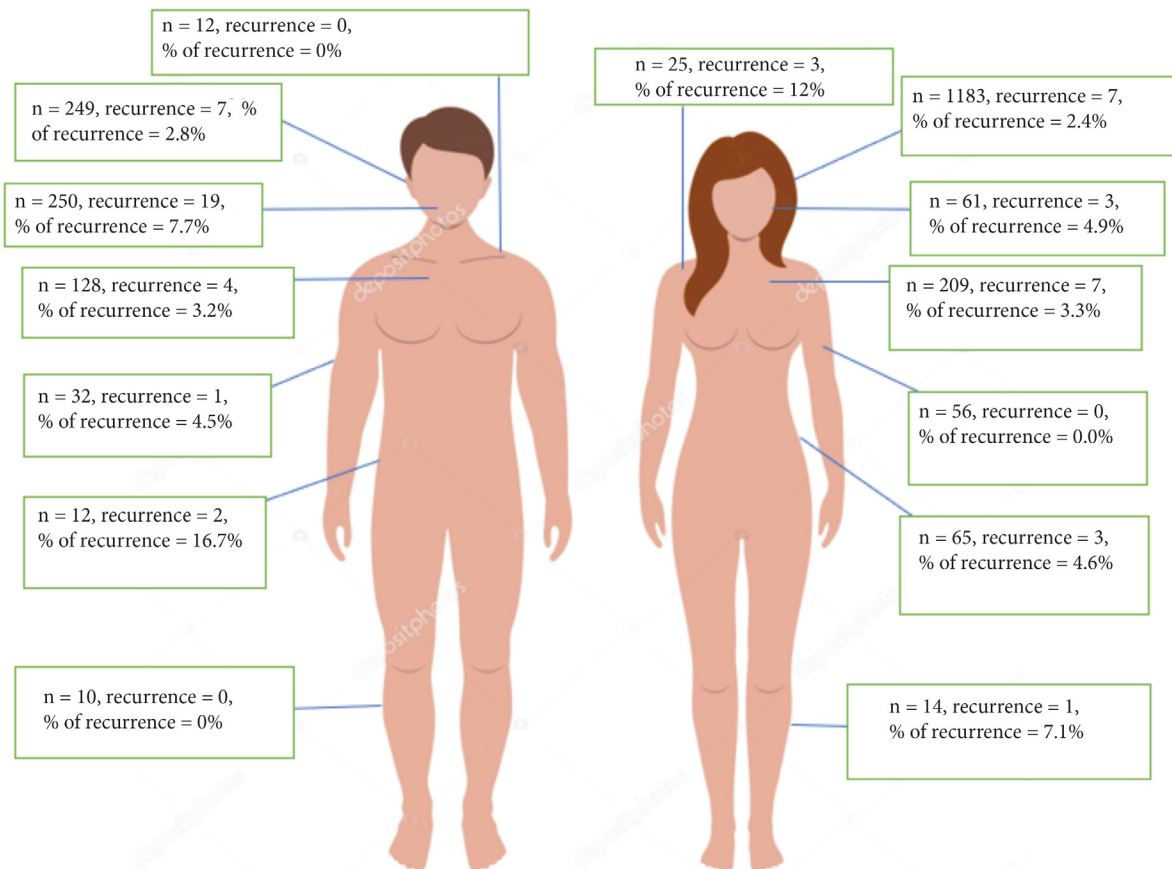


Figure 2 Anatomical location of keloids and recurrence for each sex

X - Frequency

Y - Number of keloid recurrence

Z - Percentage recurrence per site

This study demonstrates statistically significant differences in the presentation and outcomes of keloids based on biological sex. We found that keloids are predominantly in females at a male to female ratio of 1:2. The high incidence of occurrence in females could be attributed to the ear-piercing practice that is more common in female patients as well a better health seeking behaviour. This finding has also been demonstrated in a study carried out with Davies et al. in a survey of patients with keloids in the USA.¹ In our study, more than 85 % of the keloids occurred in the head, neck, and chest areas of the body with less than 1% occurring on the extremities in both groups of patients. Our findings seemed to defer from other studies that had demonstrated keloids in the head and neck region contributing to about 45% with the extremities up to 30%.² While the auricular keloids were the most common in the female patients probably due to ear piercing, cheek keloids were the commonest in the male patients most likely as a result of trauma induced by shaving.

Overall keloid recurrence rate was low at only 3.5% suggesting that surgical excision followed by post-excision radiotherapy in our patients' cohort gives good outcomes. More than 85% of the recurrence occurred in the first year of surgery. Claudia et al. reported the recurrence of 94% in the first year of follow-up.³ The recurrence of keloids following surgical excision with radiotherapy varies widely in the literature.^{3,4} The recurrence rate for the male patients (5 %) was almost twice as high as in the female patients (2.8%) (p-value<0.05). The higher recurrence in the male patients had also been reported by a study done by Shen et al.⁴ (17). In their study, other factors that contributed to the recurrence were patients' age, radiotherapy beyond 24 hours of surgery, large surface area of the keloid, and extralesional excision as compared to intralesional.

Conflict of Interest

None declared.

Funding

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Ethical approval

Ethical approval was sort from KNH/UON ethics research committee the reference number is P291?04?2018

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.bjps.2021.08.030](https://doi.org/10.1016/j.bjps.2021.08.030).

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